CLAIM AMENDMENTS

1. (Currently amended) A sensor package comprising:

a) a vertical sensor circuit component comprising a first face, a second face, a bottom edge, a top edge, two side edges, input/output (I/O) pads and at least one sensitive direction wherein the I/O pads are arranged on the second face of the vertical sensor circuit component; and

b) a horizontal sensor circuit component comprising a top face, a printed circuit board (PCB) mounting face, a vertical sensor circuit component interface edge, at least two or more other edges, and at least one sensitive direction orthogonal to the sensitive directions of the vertical sensor circuit component,

wherein the vertical sensor circuit component interface edge of the horizontal sensor circuit component connectively supports the vertical sensor circuit component along the Z axis; and

wherein the first face comprises I/O pads for conductive connection to the horizontal sensor circuit component.

2. (Allowed) The sensor package of claim 1 wherein the distance between the bottom edge and the top edge of the vertical sensor circuit component is about 1.1mm.

3. (Allowed) The sensor package of claim 1 wherein the distance between the bottom edge and the top edge of the vertical sensor circuit component is less than about 1.1mm.

4. (Allowed) The sensor package of claim 1 wherein the I/O pads on the vertical sensor circuit component are arranged in an array.

5. (Allowed) The sensor package of claim 1 wherein the I/O pads on the vertical sensor circuit

McDonnell Boehnen Hulbert & Berghoff LLP
300 South Wacker Drive
Chicago, Illinois 60606
Telephone: (312) 913-0001
Facsimile: (312) 913-0002

component are compatible with a method selected from the group consisting of wire bonding, flip chip, solder bumping, stud bumping, conductive epoxy, flexible interconnect bonding, and tape automated bonding (TAB) techniques.

6. (Cancelled).

7. (Allowed) The vertical sensor circuit component of claim 1 wherein the I/O pads are compatible with a method selected from the group consisting of wire bonding, flip chip, solder bumping, stud bumping, conductive epoxy, flexible interconnect bonding, and tape automated bonding (TAB) techniques.

8. (Allowed) The sensor package of claim 1 wherein the vertical sensor circuit component and the horizontal sensor circuit component are solid state sensors.

9. (Allowed) The sensor package of claim 1 wherein the vertical sensor circuit component and the horizontal sensor circuit component are magnetic sensors.

10. (Allowed) The sensor package of claim 1 wherein the vertical sensor circuit component and the horizontal sensor circuit component are tilt sensors.

11. (Allowed) The sensor package of claim 1 wherein the vertical sensor circuit component comprises a sensor and the horizontal sensor circuit component comprises a solid state chip with the vertical sensor circuit component interface edge.

McDonnell Boehnen Hulbert & Berghoff LLP
300 South Wacker Drive
Chicago, Illinois 60606
Telephone: (312) 913-0001
Facsimile: (312) 913-0002

12. (Currently amended) A sensor package comprising:

a) a vertical sensor circuit component comprising a first face, a second face, a bottom edge, a top edge, two side edges, input/output (I/O) pads and at least one sensitive direction wherein the I/O pads are arranged on the second face of the vertical sensor circuit component; and

b) a horizontal sensor circuit component comprising a top face, a printed circuit board (PCB) mounting face, a vertical sensor circuit component interface edge, at least two or more other edges, and at least one sensitive direction orthogonal to the sensitive directions of the vertical sensor circuit component,

wherein the vertical sensor circuit component interface edge of the horizontal sensor circuit component connectively supports the vertical sensor circuit component along the Z axis; and

wherein the vertical sensor circuit component is conductively connected to the horizontal sensor circuit component.

13. (Allowed) A method for mounting a vertical sensor circuit component with a first and second face, a bottom, a top and two side edges, and I/O pads arranged on the second face to a PCB comprising:

a) connecting the bottom edge of the vertical sensor circuit component to the PCB; and

b) connecting the first face of the vertical sensor circuit component to a vertical sensor circuit component interface edge of one or more horizontal sensor circuit components comprising a top face, a PCB mounting face, a vertical sensor circuit component interface edge, and at least two other edges, wherein the horizontal sensor circuit component is connected to the PCB;

wherein the vertical sensor circuit component interface edge of the horizontal sensor circuit component to which the vertical sensor circuit component is connected supports the vertical sensor circuit component along the Z axis.

McDonnell Boehnen Hulbert & Berghoff LLP
300 South Wacker Drive
Chicago, Illinois 60606
Telephone: (312) 913-0001
Facsimile: (312) 913-0002

14. (Allowed) The method of claim 13 wherein the vertical sensor circuit component is conductively connected to the PCB by a method selected from the group consisting of wire bonding, flip chip, solder bumping, stud bumping, conductive epoxy, flexible interconnect bonding, and tape automated bonding (TAB) techniques.

15. (Allowed) The method of claim 14 wherein the vertical sensor circuit component is conductively connected to the PCB by conductive epoxy, solder bumping or stud bumping techniques.

16. (Allowed) The method of claim 13 wherein the vertical sensor circuit component and the one or more horizontal sensor components are diced wherein the edges are substantially perpendicular to the faces.

17. (Allowed) A method for making a multi-axis magnetometer for measuring the magnetic field intensity along at least two orthogonal axes comprising:

a) mounting one or more magnetic field sensing circuit components comprising a top face, a PCB mounting face, a vertical magnetic sensor circuit component interface edge, and two or more other edges, by their PCB mounting face to a PCB; and

b) mounting to the PCB a vertical magnetic sensor circuit component comprising a first face, a second face, a bottom edge, a top edge, two side edges, input/output (I/O) pads and at least one sensitive direction wherein the I/O pads are arranged on the second face of the vertical sensor circuit component;

wherein the vertical magnetic sensor circuit component is attached to and supported by the

McDonnell Boehnen Hulbert & Berghoff LLP
300 South Wacker Drive
Chicago, Illinois 60606
Telephone: (312) 913-0001
Facsimile: (312) 913-0002

at least one magnetic field sensing circuit component; and

wherein the vertical magnetic sensing circuit component is conductively connected to the magnetic field sensing circuit component.

18. (Allowed) The method of claim 17 wherein the magnetic field sensing circuit component is one or more horizontal sensor circuit components.

19. (Allowed) The method of claim 17 wherein the magnetic field sensing circuit component is one or more horizontal, 1-dimensional sensor circuit components.

Claims 20-23 (cancelled).

24. (Allowed) The method of claim 17 wherein the conductive connection is formed with an adhesive.

25. (Allowed) The method of claim 24 wherein the adhesive is conductive epoxy.

26. (Allowed) A multi-axis magnetometer for measuring the magnetic field intensity along at least two orthogonal axes produced according to the method of claim 17.

27. (Allowed) The multi-axis magnetometer for measuring the magnetic field intensity along three orthogonal axes of claim 26, further comprising a tilt sensor.

28. (Allowed) The multi-axis magnetometer for measuring the magnetic field intensity along three

McDonnell Boehnen Hulbert & Berghoff LLP
300 South Wacker Drive
Chicago, Illinois 60606
Telephone: (312) 913-0001
Facsimile: (312) 913-0002

orthogonal axes of claim 26 wherein the vertical magnetic sensor circuit component is about 1.1 mm in height above the PCB.

29. (Allowed) The multi-axis magnetometer for measuring the magnetic field intensity along three orthogonal axes of claim 27 wherein the vertical magnetic sensor circuit component is about 1.1 mm in height above the PCB.

30. (Allowed) The multi-axis magnetometer for measuring the magnetic field intensity along three orthogonal axes of claim 26 wherein the vertical magnetic sensor circuit component is less than about 1.1 mm in height above the PCB.

31. (Allowed) The multi-axis magnetometer for measuring the magnetic field intensity along three orthogonal axes of claim 27 wherein the vertical magnetic sensor circuit component is less than about 1.1 mm in height above the PCB.

32. (Currently amended) A sensor package comprising:

a) a vertical sensor circuit component comprising a first face, a second face, a bottom edge, a top edge, two side edges, input/output (I/O) pads and at least one sensitive direction wherein the I/O pads are arranged on the second face of the vertical sensor circuit component; and

b) a horizontal sensor circuit component comprising a top face, a printed circuit board (PCB) mounting face, a vertical sensor circuit component interface edge, at least two or more other edges, and at least one sensitive direction orthogonal to the sensitive directions of the vertical sensor circuit component, wherein the horizontal sensor circuit component is connected to the PCB,

wherein the vertical sensor circuit component interface edge of the horizontal sensor circuit

McDonnell Boehnen Hulbert & Berghoff LLP
300 South Wacker Drive
Chicago, Illinois 60606
Telephone: (312) 913-0001
Facsimile: (312) 913-0002

component connectively supports the vertical sensor circuit component along the Z axis.

33. (Allowed) The sensor package of claim 32 wherein the vertical sensor circuit component is non-conductively connected to the horizontal sensor circuit component.

34. (Allowed) The sensor package of claim 33 wherein the non-conductive connection is formed with an adhesive.

35. (Allowed) The sensor package of claim 34 wherein the adhesive is non-conductive epoxy.

36. (Allowed) The sensor package of claim 32 wherein the vertical sensor circuit component is conductively connected to the horizontal sensor circuit component.

McDonnell Boehnen Hulbert & Berghoff LLP
300 South Wacker Drive
Chicago, Illinois 60606
Telephone: (312) 913-0001
Facsimile: (312) 913-0002